

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--KINETICS OF METHANOL DECOMPOSITION ON A ZINC-CHROMIUM-COPPER
CATALYST -U-
AUTHOR--MUKHLENOV, I.P., POMERANTSEV, V.M., SYRKINA, M.L.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 362-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--METHANOL, CATALYTIC DECOMPOSITION, METAL CATALYST, ZINC,
CHROMIUM, COPPER, CHEMICAL LABORATORY APPARATUS, CATALYST ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0461 STEP NO--UR/0080/70/043/002/0362/0367
CIRC ACCESSION NO--AP0104074
UNCLASSIFIED

2/2 016
 CIRC. ACCESSION NO--AP0104074 UNCLASSIFIED PROCESSING DATE--11SEP70
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECOMP. PROCESS WAS STUDIED
 IN LAB. EXPTS. IN A FLOW THROUGH CIRCULATING APP. AT THE FOLLOWING
 OPERATING CONDITIONS: QUANTITY OF THE CATALYST 1 CM PRIME3, REACTION
 TEMP. 240 TO 340DEGREES, CONTACT TIME 0.18 TO 0.36 SEC, AND THE CHEM.
 COMPN. OF THE FEED MIXT.: CO 10 TO 20, MECH 4 TO 10, AND H 70 TO 86
 VOL. PERCENT. THE INVESTIGATED CATALYST (GRAIN SIZE 0.7 MM, ZNO 45.4,
 CR SUB2 O SUB3 21.2, AND CUO 33.4 WT. PERCENT) WAS REDUCED WITH H AT
 280DEGREES FOR 8 HR AND STABILIZED AT 350DEGREES FOR 60 HR. THE DEGREE
 OF THE MECH. DECOMP. WAS REGARDED AS THE MEASURE OF THE CATALYST
 ACTIVITY. THE RESULTS ARE PRESENTED IN FORM OF DIAGRAMS. THE FOLLOWING
 KINETIC EQUATION IS PROPOSED: $U = K (P_H^{0.25} - P_{CO}^{0.25})$,
 WHERE U IS THE RATE OF THE REACTION MECH YIELDS CO PLUS 2H SUB2, K IS
 THE RATE CONST., AND P_H AND P_{CO} ARE THE PARTIAL PRESSURES OF MECH AND
 CO, RESP. THE CALCD. RATE CONSTS. ARE 1.44, 2.9, AND 3.85 FOR 301, 322,
 AND 329.5DEGREES, RESP. THE DECOMP. OF MECH IS A CONSECUTIVE PROCESS.
 THE LIMITING STAGE IS THE DESORPTION OF CO FROM THE CATALYST SURFACE.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

ARETINSKIY, B. V., YASTREBOV, A. P., KHAMIDULLIN, A. P., and SYRNEV, V. A.

"Changes in Protein Synthesis and Bioenergetics in Rat Lung Tissue After Exposure to a Combination of Quartz Dust and Diesel Exhaust Gases"

Tr. Tsentr. n.-i. proyekt.-konstrukt. in-ta profilakt. pnevmonokoniczov i tekhn. bezopasn. (Works of the Central Research and Design Institute for the Prevention of Pneumoconiosis and Accidents), 1971, No 5, pp 117-122 (from RZh-Biologicheskaya Khimiya, No 24, Dec 72, Abstract No 24 F2270)

Translation: Exposure of rats treated with quartz dust to diesel exhaust gases for 1 month resulted in slight stimulation of the energy processes in lung and liver mitochondria and preservation of the normal level of incorporation of 1-C^{14} -glycine into the proteins of these tissues. Exposure to the gases for 3 months markedly reduced both the intensity of the energy processes in the mitochondria and the incorporation of glycine into the proteins of liver and lung tissues.

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USSR

UDC 547.26'118 + 546.183-31

GAZIZOV, M. B., RAZUMOV, A. I., SYRNEVA, L. P., and RUDAKOVA, L. G.,
Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Phosphorylated Acetals With Trivalent Phosphorus Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, p 2787

Abstract: Phosphorylated acetals react with diethylchlorophosphite after 8 hrs heating at 50-60° yielding diethylphosphorous acid and esters of β -ethoxyvinylphosphonic or phosphinic acids — $R(C_2H_5O)P(O)CH:CHOC_2H_5$; R, yield in %, b.p./mm pressure, d_4^{20} , and n_D^{20} being reported: C_2H_5O , 74.2, 75°/0.12, 1.0700, 1.4435; CH_3 , 65.7, 80/0.25, 1.0524, 1.4570; C_2H_5 , 77.5, 74°/0.09, 1.0367, 1.4560.

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USSR

UDC 681.327

VOKHRYSHEV, V. Ye., KOZHEVNIKOV, I. M., and SYROCHEVA, N. M.

"Pneumatic Bypass Device"

USSR Author's Certificate No 275516, Filed 24/03/69, Published 15/10/70
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i
Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B477P)

Translation: This invention relates to computer technology and can be used in logic control machines, centralized control devices, and other computers made of pneumatic automation elements. Pneumatic bypass devices are known, consisting of standard one-cycle pulse delay circuits. However, these devices have a constant predetermined number of outputs. This does not allow them to be used to solve a number of problems in which the number of outputs of the bypass device must be changed during the operating process, either automatically or from the control board. The pneumatic bypass device suggested contains series-connected delay units for each input and OR element and differs in that in order to allow the bypass cycle to be changed, each stage (except for the last stage) contains a tube and a 3-membrane relay connected as a blocking circuit. The first inputs of the elements connected
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VOKHRYSEV, V. Ye., et al., USSR Author's Certificate No 275516, Filed 24/03/69, Published 15/10/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B477P)

in the blocking circuit in each stage (except for the first stage) are connected to the output of the blocking element in the preceding stage. This output is also connected to the erasing input of the one-cycle delay unit in its own stage. The blocking inputs of the tubes are connected to the output tube of the device within each digit. The outputs of all tubes are connected to the inputs of an OR element; the second inputs of all tubes, like the blocking inputs of the blocking elements, are connected to the corresponding channels for supplying instructions to change the bypass cycle, while the input of the blocking element in the first stage is connected to the input for the cycle pulses. This allows the number of bypass cycles to be changed by input of external instructions, which expands the capabilities. 1 fig.

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USSR

UDC 541.183.5:546.791

DEMENT'YEV, V. S., SYROMYATNIKOV, N. G., and OSTAPOVA, N. V.

"Study of the Uranium Isotope Exchange in the System Solution-Sorbent"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 733-739

Abstract: A study was carried out on the interphase isotope exchange of uranium between the solutions and the sorbents in contact with them such as ion exchange resins, aluminum oxide and BUU charcoal. It was determined that, depending on the composition of the solution, type of the sorbent and contact conditions, the periods of half-exchange $T_{\frac{1}{2}}$ vary from about 4 min to about 4 hrs at room temperatures. The pH of the solution, one of the basic indicators of its composition, which determines the state of uranium and the degree of sorption, has a definite effect on the rate of isotope exchange. The exchange rate dependence on the pH is very complex, reflecting the changes in uranium states and its mobility in solution. It has been stated that the exchange rates of the dissolved and adsorbed uranium are determined by the rate of diffusion "film"; this is supported by the fact that the half-exchange period $T_{\frac{1}{2}}$ is changed when the intensity of mixing is altered and when the composition of the solutions in contact with the sorbent are changed.

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USSR

UDC 539.215:532.5

KOROLYEV, V. N. and SYROMYATNIKOV, N. I., (Ural Polytechnic Institute imeni S. M. Kirov, Sverdlovsk)

"Quasi-Liquid Flow Around Bodies"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 1, Mar-Apr 72, pp 58-59

Abstract: Structural-hydrodynamic characteristics of quasi-liquid media near bodies such as spheres, cylinders, plates and wedges in a layer of microgranular charotte fluidized by air are investigated, using x-ray photography. The results show that the flow critical conditions and the velocity of disturbances propagation in fluidized media are different from those calculated from the average values.

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USSR

UDC 621.372.831.3(088.8)

SYROMYATINKOV, Yu. B.

"Rotating Device for Connecting Wave Guide Section"

USSR Author's Certificate No 251628, Filed 10 Feb 68, Published 25 Feb 70
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B199 P)

Translation: The proposed rotating device for connecting wave guide sections contains two flanges with chokes and rubber sealing rings placed in the grooves of the flanges. In order to maintain the parameters of the device on bending and rotating the wave guide section, the flanges are equipped with hemispherical grooves. A sphere equipped with an additional flange and an internal wave guide channel which is conjugate to the internal wave guide channel of one of the flanges with the hemispherical groove is placed between the flanges. The device is sealed by using rubber sealing rings at the points of joining the flanges with the hemispherical groove. In the case of bending and rotation of the wave guide sections, the sphere with the auxiliary flange is rotated inside the spherical cavity formed by the two flanges with hemispherical grooves. Since the center of rotation of the sphere remains in place in this case, the gap in the choke remains invariant under all conditions. There are three illustrations.

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1/2 028 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--FEATURES OF METABOLIC PROCESSES IN CASES OF DEFORMING ARTHROSIS -U-
AUTHOR--(02)-BLCKHIN, N.N., SYROMYATNIKOVA, N.V.
COUNTRY OF INFO--USSR
SOURCE--ORTOP TRAVMATOL PROT 31(2): 53-56. 1970.
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--METABOLISM, SERUM PROTEIN, BIOCHEMISTRY, MUSCULOSKELETAL
SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605015/F05 STEP NO--UR/9115/70/031/002/0053/0056
CIRC ACCESSION NO--AP0140638
UNCLASSIFIED

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CIRC ACCESSION NO--AP0140638

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. STUDIES WERE MADE OF 41 PATIENTS (20 MEN, 21 WOMEN) WITH DEFORMING ARTHROSIS OF THE KNEE JOINT OR PELVIC FEMUR JOINT. THE PATIENTS RANGE FROM 20 TO 40 YR IN AGE AND HAD SUFFERED FROM 2 TO 15 YR FROM THEIR CONDITION. THE STUDIES INCLUDED BLOOD SUGAR DETERMINATION, SERUM PROTEIN, ALALIC ACID, HAPTOGLOBIN, C REACTIVE PROTEIN, FIBRINOGEN, RESIDUAL NITROGEN, URIC ACID, ALKALINE PHOSPHATASE, AND ELECTROLYTES. IN CASES OF DEFORMING ARTHROSIS, LOCAL BIOCHEMICAL CHANGES ARE OBSERVED IN THE JOINT THAT ARE REFLECTED IN THE METABOLIC PROCESSES IN THE ENTIRE ORGANISM. THE IRRITATIVE FOCI WHICH CAUSE SHARP PAIN SENSATIONS LEAD TO A CHANGE IN THE METABOLIC PROCESS THROUGHOUT THE ENTIRE ORGANISM. EVEN SURGICAL INTERVENTION IN THE FORM OF JOINT RESECTION DOES NOT CAUSE BIOCHEMICAL REHABILITATION OF THE IMPAIRED METABOLIC PROCESSES. FACILITY: BIOCHEM. LAB., LENINGRAD INST. SURG. TUBERC., LENINGRAD, USSR.

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140910

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 182 REFS. THROUGH 1968, COVERING OXIDN. OF CYCLOOLEFINS WITH O, OXIDN. TO CARBONYL COMPOS., CATALYSIS OF OXIDN. BY SALTS OF METALS SUCH AS PD, AU, HG OR TL, AND OXIDN. BY ELECTROPHILIC REAGENTS. FACILITY: VSES. NAUCH.-ISSLED. INST. NEFTEKHIM. PROTSESS., LENINGRAD, USSR.

UNCLASSIFIED

Сыров, А.Р.

For complete article see:
JPRS 54516
18 Nov 1971

Сыров, А.Р.

POSSIBILITIES OF PERT PLANNING IN CRIMINAL INVESTIGATION
(Article by A. P. Syrov, Moscow, Pravovaya Kibernetika, Russian, 1970, pp 198-211)

Pert planning and control is a serious achievement of scientific organization of labor in recent times.² It is a method of optimal solution of the so-called "problems of ordering." These problems are, in turn, one of the classes of so-called "operations problems" entering into the scientific discipline called "operations research." The last-mentioned is a branch of cybernetics and deals primarily with the problems of optimal control in all spheres of production.³

Pert planning and control has proved its effectiveness⁴ in the most varied branches of activity: in missile production, aircraft and shipbuilding, in industrial construction, in the organization of complex scientific research, in art, in administrative operations, and so on. From the cross-section of the lastest missile complexes to replacement of furniture in a large institution — such is the range of application of Pert planning in a large resolving the "problems of ordering."

These problems arise everywhere where complex developments have many new and heterogeneous elements, where we are dealing with something not yet proven, where it is necessary to be ready daily and hourly for a different type of unexpected situation where the times for individual operations can be indicated only hypothetically.⁵ Pert planning and control can be used successfully everywhere in such cases. It is hardly necessary to prove that the given class of problems is also characteristic of criminal investigations. Therefore, we have stated the proposition of the expediency of applying certain ideas and procedures of Pert planning and control in the techniques of planning and organizing investigatory operations.⁶

Other authors have come out simultaneously for the application of Pert charts and Pert techniques in the organization of criminal investigations. From the point of view of organization of time and reducing investigation time, the application of Pert techniques when planning and organizing the investigation of complex multiphase affairs — affairs the investigation

1- programmed evaluation and control technique

Pert Planning in Criminal Investigation

of which, in PERT language, requires coordination of action among many "co-executives" and includes hundreds and thousands of events and operations -- can turn out to give the best results.

By comparison with traditional means of calendar planning, PERT methods have a number of advantages. The deficiencies of traditional calendar methods are exhibited primarily in that they, including (just as PERT methods) a list of actions and measures, do not reflect their interrelation sufficiently clearly and to the required degree. Secondly, organizational solutions in calendar charts take on a rigid form and soon after beginning of execution of the plan cease to reflect the actual state of the matter. Insufficient flexibility of the traditional planning models limits the possibilities of forecasting and prediction of the future course of the investigation or inquiry and included without sufficient basis and without calculating the time.

These deficiencies are eliminated by PERT planning and control. If the advantages of PERT methods as applied to inquiry planning are to be characterized in brief, they consist in the fact that they permit the following:

Clear formulation of all the intermediate goals and problems leading to the achievement of the basic goal of the investigation or completion of the inquiry;

Discovery and reflection of the actions and measures (independently of their scale) with a sufficient degree of detail, completion of which is necessary and sufficient to achieve the given goal;

Reflection and clear representation of the relations between the actions and measures and their logical structure;

Realization of a well-founded forecast of the "critical" chain of events

and measures, that is, the events and measures the times of execution of which determine the deadline for the investigation or inquiry as a whole, at the same time revealing the "bottlenecks" in the plan in advance;

Provision of the investigator with timely, exhaustive information about the actual state of execution of the plan and facilitation of making well-founded tactical decisions;

Systematic correction of the plan in accordance with the actual state of the investigation or the course of preparation and performance of an individual (dynamic nature) of the planning;

More effective utilization of resources, in particular, time reserves.

It is possible to discover how the enumerated advantages of applying PERT methods in investigation planning can be achieved only by investigating the basic concepts of the PERT model and the rules for construction, optimization and correction of it.

USSR

UDC: 51

SYROV, Yu. P., CHURKVEIDZE, Sh. S., ARBATSKIY, G. M., TRUFANOV, V. V.

"On Optimizing Intersectoral and Interregional Communications in Planning the Development of a United National Economic System"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works. Institute of Mathematics, Siberian Department, Academy of Sciences of the USSR), 1971, vyp. 2(19), pp 138-168 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V501)

[no abstract]

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USSR

UDC 512.25/.26+519.3.330.115

VOYTSEKHOVSKAYA, G. V., SYROV, Yu. P.

"One Method of Solving a Discrete Problem of Mathematical Programming"

Metody Upr. Bol'shimi Sistemami. T. 2 [Methods of Control of Large Systems, Vol. 2 -- Collection of Works], Irkutsk, 1970, pp 204-210 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V570 by Yu. Finkel'shteyn).

Translation: The problem of optimization of the structure of a planned electric power engineering system is studied. The initial technical and economic prerequisites are briefly presented. Mathematical formalization leads to the problem of nonlinear discrete programming of a special type. To provide an approximate solution, it is suggested that the method of group relaxation (coordinate-by-coordinate descent) be used. The method was applied to solve the problem of optimization of the structure of actual power engineering systems. The results of calculations were used in planning practice. An experimental study was performed, showing that of several different existing versions, from which the process of solution is begun, the same result is produced. The authors consider without foundation that the stable solution produced can be considered the global optimum (or near it).

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USSR

UDC 547.832:542.944.938

KHOLODOV, L. Ye., SYROVA, G. P., and YASHUNSKIY, V. G., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Quinindine. VI. Investigation of Bromination in the β -Quinindane Series. Synthesis of 3H- β -Quinindane System"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 96-101

Abstract: Bromination of β -quinindane and β -quinindane-9-carboxylic acid in glacial acetic acid at 50-60° yields tribromo- and tetrabromo-substituted 1H- and 3H- β -quinindenes. When β -quinindane tribromide is hydrolyzed with silver nitrate solution it yields 1-bromo-3H- β -quininden-3-one; when H_2SO_4 is used in hydrolysis -- a rearrangement occurs with formation of 1,2-dibromo-3H- β -quininden-3-one. Possible mechanism of formation of the reaction products is discussed. IR, UV, and PMR spectral data are reported. This appears to be the first synthesis of a novel heterocyclic system of 3H- β -quinindene.

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USSR

UDC 547.539.131

KONDRATENKO, N. V., SYROVA, G. P., POPOV, V. I., SHEYNKER, Yu. N., and YAGUPOL'SKIY, L. M., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"Aryltrihalosilanes and Germanes. σ Constants of Trihalosilyl and -Germyl Groups

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2056-2060

Abstract: The synthesis of fluorobenzene derivatives with SiHlg_3 and GeHlg_3 substituents where $\text{Hlg}=\text{F}$, Cl and Br is described and the σ constants of these groups determined. It was found that the induction effect increases in the series of substituents $\text{CHlg}_3 < \text{SiHlg}_3 < \text{GeHlg}_3$ with an increase in the electron donor capacity of the central atom to the halide atoms. The SiHlg_3 and GeHlg_3 hardly differ with respect to the conjugation effect, but they both excel the acceptor effect of the corresponding CHlg_3 groups. The regularities in changes in the σ_c constant value are attributed to the participation of silicon and germanium atoms in $d_p\text{-}p_\pi$ conjugation. The yields, physical constants and analytical results of the obtained compounds are presented in a table.

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1/3 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--QUININDENES. I. SYNTHESIS OF 2,3,DIHYDRO,BETA,QUININDENES (BETA
QUININDANES) BY THE PFITZINGER REACTION -U-

AUTHOR--(04)-KHOLODDV, L.YE., SYROVA, G.P., YASHUNSKIY, V.G., SHEYNKER,
YU.N.

COUNTRY OF INFO--USSR

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SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 78-82

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--UV SPECTRUM, IR SPECTRUM, NMR SPECTRUM, CHEMICAL SYNTHESIS,
QUINOLINE, POLYNUCLEAR HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1983/1171

STEP NO--UR/0409/70/000/001/0078/0082

CIRC ACCESSION NO--AP0054071

UNCLASSIFIED

2/3 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054071

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUX OF 50 G OF ISATIN WITH 85 G CYCLOPENTANONE IN A MIXT. OF 400 ML ETOH AND 200 ML 33PERCENT AQ. KOH 8.5 HR FOLLOWED BY VACUUM DISTN. OF THE ETOH AND PART OF THE H SUB2 O, DILN. WITH 800 ML H SUB2 O AND EXTN. WITH 300 ML CH SUB2 CLCH SUB2 CL, AFFORDED AN ORG. LAYER WHICH WAS CHARCOAL PURIFIED, DRIED AND VACUUM EVAPD. THE RESULTING OIL WITH PETROLEUM ETHER YIELDED 8.5 G ALPHA, ALPHA PRIME DICYCLOPENTYLIDENECYCLOPENTHANONE, M. 78-80DEGREES (PETROLEUM ETHER). THE AQ. LAYER, AFTER THE CH SUB2 CLCH SUB2 CL STEP, WAS TREATED WITH ACTIVATED C, ADJUSTED TO PH 6 WITH GLACIAL HOAC AND COOLED. THE PPT. AFTER H SUB2 O WASHING WAS EXTD. WITH ME SUB2 CO (5 TIMES 100 ML), EVAP. TO DRYNESS TO YIELD 16 G OF THE 3, CYCLOPENTYLIDENE, BETA, QUININDANE, O, CARBOXYLIC ACID, MONOHYDRATE (I), M. 113-15DEGREES (DECOMPN.) (60PERCENT OF ETOH). DRYING I (3 HR OVER P SUB2 O SUB5 (75DEGREES, 15 MM) YIELDED THE ANHYD. ACID (II) M. 198-200DEGREES (DECOMPN.); HYDROCHLORIDE M. 190-20DEGREES (DECOMPN.). TREATMENT OF AN AQ. MEOH SOLN. OF I WITH AN ET SUB2 O SOLN. OF CH SUB2 N SUB2 YIELDED THE ME ESTER, M. 135-6DEGREES (MEOH). THE RESIDUE AFTER THE ME SUB2 CO EXTN. IS 45 G (EQUATION SHOWN ON MICROFICH) BETA, QUININDANE, 9, CARBOXYLIC ACID (III), M. 280-20DEGREES (DECOMPN.); HYDROCHLORIDE M. 240DEGREES (DECOMPN.) (ETOH). A SOLN. OF 1.50 G I IN 30 ML GLACIAL HOAC WAS HYDROGENATED OVER 0.15 G OF PO-C AT ATM. PRESSURE 5 HR AT 45-50DEGREES. AFTER CATALYST REMOVAL AND DILN. WITH H SUB2 O, THE RESULTING PPT. WAS EXTD. WITH ET SUB2 O, THE ET SUB2 O, SOLN. H SUB2 O WASHED, AND THE SOLVENT VACUUM EVAPD.

UNCLASSIFIED

3/3' 019

CIRC ACCESSION NO--AP0054071

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--THE RESIDUE WAS MIXED WITH WATER FILTERED TO YIELD 0.8 G
3, CYCLOPENTYL, BETA, QUININDANE, 9-CARBOXYLIC ACID (IV), M. 240DEGREES
(DECOMPN.) (ETOH). A MIXT. OF 5 G II, 1.7 G ANHYD. NAOAC AND 30 ML
GLACIAL HOAC WAS TREATED OVER 1 HR AT 10DEGREES WITH 1.4 G BR IN 5 ML
GLACIAL HOAC AND STIRRED 1 HR AT ROOM TEMP., AND THE PPT. FILTERED AND
WASHED WITH H SUB2 O AND ME SUB2 CO TO GIVE 5.1 G
3, BROMO, 3, (1, BROMOCYCLOPENTYL), BETA, QUININDANE, 9-CARBOXYLIC ACID (V), M.
115-18DEGREES (DECOMPN.), AFTER PPTN. FROM ME SUB2 NCHO SOLN. BY ADDN.
OF H SUB2 O. IR, UV AND NMR DATA ARE GIVEN. FACILITY: VSES,
NAUCH.-ISSLED. KHIM.-FARM. INST. IN. UROZHONIKIDZE, MOSCOW USSR.

UNCLASSIFIED

USSR

UDC 547.861.07

YELINA, A. S., MUSATOVA, I. S., and SYROVA, G. P.

"Pyrazines and Their N-oxides. III. Synthesis and Properties of N-oxides of 2 and 2,3-substituted Pyrazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1275-1280

Abstract: The synthesis of N-oxides of 2 and 2,3-substituted pyrazines is described. Under the effect of alkaline reagents, the synthesized di-N-oxide of pyrazine-2-carbaldehyde in which the aldehyde group is in the hydrate form, undergoes oxidation-reduction leading to deoxidation of one of the nitrogen atoms of the ring and oxidation of the dihydroxymethyl group to a carboxyl group. In connection with the high antitubercular activity in vitro of the di-N-oxides of unsubstituted and N-substituted amides of quinoxaline-2-carboxylic acid, the corresponding derivatives in the pyrazine series were synthesized and their biological activity was studied. Paramagnetic resonance and infrared spectral data are also given.

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USSR

UDC 621.791.754.011:669.715

CHEPNYSH, V. P., SYROVATKA, V. V., Kiev Polytechnic Institute, GRITSENKO, A. F., RZHANOV, B. P., Dnepropetrovsk

"Structure and Properties of Seam Metal in AMg6 Alloy Welded with Electromagnetic Mixing"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 16-19.

Abstract: An aluminum alloy was welded by argon-arc welding using a tungsten electrode at a rate of 10 m/hr. Mixing was achieved by an axial discrete magnetic field by a coil attached to the welder. Electromagnetic mixing of the welding bath was found to produce a finer primary structure and complete suppression of zones of columnar crystals. The increased fineness of the structure was accompanied by an increase in total length of crystal boundaries by more than a factor of 3. The orientation of the structure was decreased from 28% to 21%. The mobile state of the arc during mixing helps to intensify removal of the oxide film from the bath, decreasing the porosity of the welded seams. The use of the electromagnetic mixing method helps to increase the yield of defect-free joints by more than 4 times. Induction of the controlled magnetic field has a decisive influence on the results of mixing. The reversing frequency influences primarily the surface relief of the seam.
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USSR

BULANOV, S. V., SYROVATSKIY, S. I.

UDC: 533.9...16

"Simple Models of Charged-Particle Acceleration in Layers of Neutral Current"

Leningrad, IV Leningr. mezhdunar. seminar "Yedinoobraziye uskoreniya chastits v razlich. masshtabakh kosmosa", 1972--sbornik (Fourth Leningrad International Seminar on the Uniformity of Particle Acceleration on Different Scales of the Universe, 1972--collection of works), 1972, pp 103-108 (from RZh-Fizika, No 6, Jun 73, abstract No 6G205 by A. Karkhov)

Translation: The paper deals with simple models of the dynamics of a thin layer of current and a plasma in its vicinity for the case of finite variations of the field or current in the layer. A description is given of the solution of two problems leading to situations in which strong electric fields arise and particle acceleration takes place. In the first problem the instantaneous dissociation of the current layer in the plasma is studied. The second problem deals with incidence of a finite-amplitude wave on the layer. It is shown that in the vicinity of neutral-current layers, under certain conditions, particles can be effectively accelerated (to practically unlimited energies in some instances).

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1/2 C20 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ON THE CHEMICAL COMPOSITION OF GALACTIC COSMIC RAYS -U-
AUTHOR--(02)-SYROVATSKIY, S.I., KUZHEVSKIY, B.M.
COUNTRY OF INFO--USSR, HUNGARY
SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, LITH, BUDAPEST, HUNGARY,
AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC
DATE PUBLISHED-----70
SUBJECT AREAS--AGRICULTURE, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--CHEMICAL COMPOSITION, COSMIC RAY, GALAXY, HELIUM ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605061/B04 STEP NO--HU/2506/70/029/000/0313/0316
CIRC ACCESSION NO--AT014428
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144428

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. STUDY DEALING WITH THE DATA ON THE COMPOSITION OF COSMIC RAYS AND FRAGMENTATION PARAMETERS IN HIGH ENERGY REGIONS (E GREATER THAN 1.5 GEB-NUCLEON). THESE DATA WERE USED TO ESTIMATE THE MOST PROBABLE VALUES AND THEIR UNCERTAINTIES. THE THICKNESS OF MATTER TRAVERSED BY COSMIC RAYS IN GALAXY IS CALCULATED AS X EQUALS 5.9 PLUS OR MINUS 5, 5.3 PLUS OR MINUS 4.2, AND 9 PLUS OR MINUS 4 G-SQ CM, RESPECTIVELY, FOR THREE MODELS OF PROPAGATION: REGULAR, DIFFUSION, AND HOMOGENEOUS. FOR THESE MODELS THE CHARGE COMPOSITION OF THE SOURCES IS DISCUSSED. CONSIDERING THE ABUNDANCE OF HELIUM ISOTOPES AND L NUCLEI IT IS CONCLUDED THAT THE USUALLY USED REGULAR MODEL (SLAB APPROXIMATION) IS UNRELIABLE FOR GALACTIC COSMIC RAYS. FACILITY: AKADEMIIA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SOME ASPECTS OF THE THEORY OF COSMIC RAY ORIGIN -U-
AUTHOR--(02)-GINZBURG, V.L., SYROVATSKIY, S.I. S
COUNTRY OF INFO--USSR, HUNGARY
SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY,
AUGUST 25-SEPTEMBER 4, (A70-38076 19-29) CONFERENCE SPONSORED BY THE
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, ATMOSPHERIC SCIENCES
TOPIC TAGS--COSMIC RAY, METAGALAXY, X RAY ASTRONOMY, PULSAR, SUPERNOVA,
COSMIC RADIO SOURCE, RADIO EMISSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO--FD70/605061/808 STEP NO--HU/2506/70/029/000/0009/0016
CIRC ACCESSION NO--AT0144436
UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AT0144436

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL QUESTIONS WILL BE DISCUSSED WHICH HAVE BEEN MORE FULLY INVESTIGATED SINCE THE LAST CONFERENCE (CANADA, 1967). THE MAIN QUESTIONS ARE: (1) METAGALACTIC COSMIC RAYS (NEW ESTIMATES WHICH FOLLOW FROM DATA OF X RAY AND GAMMA ASTRONOMY); (2) CHARGE COMPOSITION OF COSMIC RAYS (NEW DATA AND CALCULATIONS); (3) SPECTRA OF GALACTIC ELECTRONS AND RADIOEMISSION (COMPARISON OF DATA AND CALCULATION); (4) GALACTIC SOURCES OF COSMIC RAYS (SUPERNOVAE, PULSARS). FACILITY: AKADEMIYA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 612.813.014.464

SYROVEGIN, A. V., Laboratory of the Physiology and Hygiene of Underwater Work,
Scientific Research Institute of the Hygiene of Maritime Transportation,
Ministry of Health USSR, Moscow

"The Effect of Increased Air Pressure on the Excitability of the Neuromotor
Apparatus in Man"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 75, No 3,
1973, pp 23-26

Abstract: The investigation was conducted on 10 subjects reclining in a baro-
chamber in which the air pressure was raised to 6 atm (at a rate of 1 atm/3
min) for 18 min and then returned to normal. Excitability of spinal motoneu-
rons and of the neuromuscular apparatus was tested by applying electrical stim-
uli to the popliteal segment of the femoral nerve and recording the responses
of the soleus muscle (monosynaptic N-response) and of the medial gastrocnemius
(M-response) on a multichannel electromyograph. With increasing air pressure,
reflex excitability of spinal motoneurons decreased, as indicated by a falling
amplitude of the N-response by 5% (below control) at 2 atm, 22% at 4 atm, and
32% at 6 atm. At the same time, neuromuscular excitability increased by about
20% at 2 atm and 34% at 6 atm. During the 18-min exposure to 6 atm, the M-
response continued to increase up to 78%, while the N-response fluctuated
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SSR

SYROVEGIN, A. V., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 75,
No 3, 1973, pp 23-26

insignificantly. No return toward normal was observed in either response after decompression to 2.2 atm. It is suggested that inhibition of spinal reflex excitability may be due to activation of central inhibitory fibers, while no explanation is offered for the recruitment of additional muscle fibers in the M-response. In both cases, the underlying causative factors exert a protracted effect.

2/2

USSR

UDC 612.886

SYROVEGIN, A. V., Laboratory of the Physiology and Hygiene of Underwater Work,
Scientific Research Institute of Maritime Transport Hygiene, Ministry of Health
USSR, Moscow

"Delayed Responses of Upper Extremity Muscles to Electrical Stimulation of the
Vestibular Apparatus"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 1,
1973, pp 169-173

Abstract: The vestibular apparatus in human subjects was stimulated by means of external electrodes (one in the external auditory meatus and the other on the opposite cheek) while EMGs were being recorded in flexors and extensor of fingers. Each stimulus caused a brief alteration in the background activity of the flexors. After a latent period of 30 msec, the tonic activity of the muscles was inhibited for 25-30 msec, and then a 30 msec long burst of electrical activity occurred, which was usually followed by a second period of inhibition of the same duration. This reaction was identical in both arms. The finger extensors reacted asymmetrically. Stimulation of the vestibular apparatus with the cathode produced more pronounced inhibition and outbursts in contralateral extensors, while anode stimulation was more effective on the

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USSR

SYROVEGIN, A. V., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59,
No 1, 1973, pp 169-173

ipsilateral side. By comparing the results with those previously obtained on animals, it is concluded that the altered electrical activity of the flexors is due to activation of the medullary reticular formation, while changes in the extensors are induced by impulses conveyed by both the vestibulo- and the reticulospinal tracts.

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- 60 -

USSR

UDC: 51

PARFENOVA, V. Ye., SYROYEZHIN, I. M.

"Mathematical Economics Analysis of an Organizational Hierarchy"

V sb. Primeneniye mat. v ekon. (Use of Mathematics in Economics--collection of works), vyp. 7, Leningrad, Leningrad University, 1972, pp 54-63 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V472)

[No abstract]

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USSR

UDC 627.8:626-33.001.1

SYROYEZHIN, M. I.

"Measures in the Tailrace of Hydroengineering Complexes and Procedures for Implementing Them"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Conferences on Hydroengineering), No 59, 1970, pp 144-150 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D59)

Translation: The basis for planned developments in the tailrace of a hydro-engineering complex is careful consideration and analysis of the routine variations in natural and economic conditions after constructing the reservoir. The list of planning problems with respect to satisfaction of branch requirements for the tailrace is presented. In estimating the expediency of taking measures in the tailrace, a profitability formula is recommended. In contrast to the headrace the measures in the tailrace are not primary when constructing the hydroengineering complex; therefore, it is necessary to gradually approach their development and implementation as more reliable initial data are obtained from the actually developing conditions in the tailrace. A procedure is presented for carrying out planning and construction operations with respect to the tailrace. There are 3 illustrations and a 6-entry bibliography.

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USSR

UDC: 619:616.981.42-084.47

KOSILOV, I. A., KARPOV, EL GL, SYRTLANOV, R. M., and YAKOVLEV, I. A., Siberian Scientific Research Veterinary Institute

"Inagglutinogenic Brucellosis Vaccine From Strain B-1"

Moscow, Veterinariya, No 2, 1971, pp 46-48

Abstract: The reactivity of the newly developed brucellosis vaccine from inagglutinogenic Br. abortus strain B-1 was studied in 4,800 cattle, 3,200 of which had previously been inoculated with vaccine from strain 19. After vaccination some of the healthy animals (1 to 5%) responded in the agglutination and complement-fixation reactions with standard antigens in 3 to 5 months. After revaccination there was no increase in the number of animals reacting or in the length of time the antibodies remained. Complement-fixing antibodies with homologous antigen were found in 85% of the animals 20 to 30 days after inoculation. The vaccine produced the same degree of immunity in young cows subsequently inoculated with a virulent culture from the Br. abortus 54 strain as the widely used vaccine from strain 19. For example, Brucella were isolated from the regional lymph nodes of only 9 of 16 animals vaccinated with B-1 vaccine. The immunity conferred by the

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USSR

KOSILOV, I. A., et al, Veterinariya, No 2, 1971, pp 46-48

two vaccines diminished steadily and after 23 to 30 months most of the animals could not resist experimental infection. However, revaccination at this time with either vaccine restored immunity.

2/2

USSR

Veterinary Medicine

UDC 576.858.5.097.2

SYRTMADZHIYEV, KR., and GENOV, I., Veterinary Institute of Bacterial and Parasitic Diseases, Sofia

"A Study of Type-Specific Antigens of Adenoviruses Isolated From Cattle by the Fluorescence Technique"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 676-679

Abstract: Type-specific antigens of adenovirus types 1, 2, 3, 4, 5, 6, isolated from cattle and grown in calf kidney cell cultures, were investigated by the immunofluorescence technique and complement fixation tests. Both homologous and heterologous adenovirus hyperimmune sera specific for the individual serological groups yielded positive cross immunofluorescent reactions with all adenovirus types 1 through 6. Up to 50% of the cells became fluorescent in about 3 days, showing that the virus antigens were located mainly inside the nuclei and only occasionally around the nuclei. Complement fixation tests were also positive with both homologous and heterologous antisera. It was concluded that the immunofluorescence method can be used for a quick diagnosis and group differentiation of adenovirus strains.

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Acc. Nr.: AN0104958

Ref. Code: 2189022

AUTHOR-- SYRISOV, YE., SOVETSKAYA ROSSIYA REPORTER
TITLE-- "YUBILEYNY" GOES DOWN THE WAYS
NEWSPAPER-- SOVETSKAYA ROSSIYA, APRIL 23, 1970, P 4, COL 4
ABSTRACT-- MEDIUM SIZE REFRIGERATION FISHING TRAWLER NO. 14 HAS
BEEN LAUNCHED AT THE YAROSLAV SHIPBUILDING FACTORY.

Reel/Frame

19871841

12 JW

UNCLASSIFIED
TITLE--SULFITE CONTAINING COMPLEXES OF COBALT, III, WITH ALPHA BENZIL
DIOXIME -U-
AUTHOR--SYRTSOVA, G.P.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1308-12
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SULFITE, COBALT COMPLEX, OXIME, AMMONIA, SODIUM COMPOUND,
POTASSIUM COMPOUND--
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0942
CIRC ACCESSION NO--AP0137970
STEP NO--UR/0078/70/015/005/1308/1312
UNCLASSIFIED

U11
CIRC ACCESSION NO--AP0137970 UNCLASSIFIED PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NA, (CO(NH SUB3) SUB6) PRIME3
POSITIVE, AND (CO(NH SUB3) SUB5 H SUB2 O) PRIME3 POSITIVE SALTS OF
(CO(SO SUB3) SUB2 (DF) SUB2) PRIME3 NEGATIVE, WHERE HOF EQUALS BENZIL
DIOXIME, WERE PREPD. IN ACIDIC MEDIA ONE SULFITE GROUP OF NA SUB3
(CO(SO SUB3) SUB2 (DF) SUB2) HYDROLYZES TO FORM (CO(SO SUB3 H) (DF) SUB2 H
SUB2 O). MIXED OCMPLEXES WERE PREPD. OF THE GENERAL FORMULA M
SUB2(CO(SO SUB3)X(DF) SUB2) NH SUB2 O (WHERE M EQUALS NA, K, OR NH SUB4,
X EQUALS SCN PRIME NEGATIVE OR NO SUB2 PRIME NEGATIVE). K(COSO SUB3(DF)
SUB2 H SUB2 O WAS ALSO PREPD. FACILITY: KISHINEV. GOS. UNIV.,
KISHINEV, USSR.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--COMPLEXES OF COBALTI(III) WITH METHYLGLYOXIME -U-

AUTHOR--(021)-SYRTSOVA, G.P., LUCNG, N.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1027-32

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBALT COMPLEX, OXIME, SODIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1188

STEP NO--UR/0078/70/015/004/1027/1032

CIRC ACCESSION NO--AP0128606

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING A 1:2 MIXT. OF NA
SUB3(CO(NO SUB2) SUB6) WITH METHYLGLYOXIME (MH SUB2) GAVE NA(CO(NO SUB2)
SUB2) (MH) SUB2) H SUB2 O (1) SOL. IN H SUB2 O OR MEOH AND SLIGHTLY SOL.
IN ME SUB2 CC. 1 REACTS WITH DILD. HCL TO GIVE THE STRONG ACID H(CO(NO
SUB2) SUB2(MH) SUB2) 2.5H SUB2 O. NO SUB2 GROUP OF I WERE EASILY
REPLACED AND AS A RESULT NA(CO(SCN) SUB2 (MH) SUB2) 2H SUB2 O, (CO(OH)
SUB2 (NH SUB3) SUB2) (CO(SCN) SUB2 (MH) SUB2) 2H SUB2 O, (CO(OH) SUB2 PY
SUB2) (CC(CH SUB2 (MH) SUB2) 2H SUB2 O, NA SUB3 (CO(SO SUB3) SUB2 (MH
SUB2) H SUB2 O, (NH SUB4) SUB3) CO(SO SUB3) SUB2 (MH) SUB2 5.5H SUB2 O,
(CO(NH SUB3) SUB6) (CO(SO SUB3) SUB2 (MH) SUB2) 9.5H SUB2 O, AND (CO(EN)
SUB3) (CO(SO SUB3) SUB2 (MH) SUB2) 4H SUB2 O, WHERE OH SUB2 EQUALS
DIMETHYLGLYOXIME, WERE PREPD. THE ACID GROUPS OF THESE COMPLEXES ARE
IN TRANS POSITION AND THEIR TRANS EFFECT HAS THE SAME ORDER OF
DECREASING STRENGTH AS IN ANALOGOUS DIMETHYLGLYOXIME COMPLEXES.
FACILITY: KISHINEV. GDS. UNIV., KISHINEV, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF ORGANIC SOLVENTS ON THE KINETICS OF THE AQUATION OF
COBALT(III) TRANS BROMO AND IODOSULFITODIOXIMINES -U-
AUTHOR--SYRTSOVA, G.P., KORLETYANU, L.N., NGUYEN, S.L.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 475-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SOLVENT, COBALT COMPLEX, IMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0306 STEP NO--UR/0078/70/015/002/0475/0479
CIRC ACCESSION NO--AP0103961
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103961

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATE OF AQUATION OF TRANS (COX(SO
SUB3)(DH) SUB2) PRIME2 NEGATIVE, X EQUALS CL, BR OR I AND DH EQUALS
MEC(:NOH)C(:NO PRIME NEGATIVE)ME, DECREASED WITH INCREASING CONC. OF
ORG. SOLVENT (MEOH, ETOH, ETHYLENE GLYCOL, DIOXANE) IN THE REACTION
MEDIUM. THE VALUES OF DELTA S NOT EQUAL TO, LOG A, AND ARRHENIUS
EQUATIONS FOR THE REACTIONS AT DIFFERENT CONCNS. OF ORG. SOLVENTS ARE
TABULATED.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--AQUATION OF SODIUM
CHLOROHYDROSULFITOBIS(DIMETHYLGLYOXIMATO)COBALTATE(III) IN WATER AND
AUTHOR--(02)-SYRTSOVA, G.P., NGUYEN, S.L.
COUNTRY OF INFO--USSR S
SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 470-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AQUEOUS SOLUTION, COBALT COMPLEX, ORGANIC SOLVENT,
POTENTIOMETRIC TITRATION, CHLORINE, ACTIVATION ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0327 STEP NO--UR/0078/70/015/002/0470/0474
CIRC ACCESSION NO--AP0103982
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103982

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF AQUATION OF (COCL(SO SUB3 H)(OH) SUB2) PRIME NEGATIVE (OH EQUALS MEC(1S TO NOH)C(1S TO NO PRIME NEGATIVE) MINUS ME) WAS STUDIED IN AQ. ORG. SOLVENT (ETHYLENE GLYCOL, MECH, ETOH, DIOXANE) SOLNS. BY POTENTIOMETRIC TITRN. OF CL PRIME NEGATIVE. THE AQUATION IS A 1ST ORDER REACTION, HAVING AN ACTIVATION ENERGY OF SIMILAR TO 13 TO 15 KCAL-MOLE, DELTA S IS NOT EQUAL TO MINUS 29.9 TO MINUS 33.6, AND A PREEXPONENTIAL COEFF., A, OF 7 TIMES 10 PRIME5 MINUS 1.4 TIMES 10 PRIME6. THE RATE OF AQUATION OF (COCLX(SH) SUB2) PRIME NEGATIVE (X EQUALS SO.SUB3 H, NO SUB2, OR CL) IS INVERSELY PROPORTIONAL TO THE STRENGTH OF THE TRANS EFFECTS OF X.

UNCLASSIFIED

USSR

SYRTSOVA, YE. D.

UDC 51

"Mathematical Methods in the Planning and Control of Construction Production.
Text for Students of the Institutions of Higher Learning Specializing in
Economics and the Organization of Construction"

Matematicheskiye metody v planirovanii i upravlenii stroitel'nym proizvodstvom.
Uchebn. posobiye dlya stud. vysov. obuch. po spets. Ekonomika i organizatsiya
stroitel'stva (Mathematical Methods in the Planning and Control of Construction
Production. Text for Students of the Institutions of Higher Learning Special-
izing in Economics and Organization of Construction), Vysshaya shkola Press, 1
1972, 336 pp, ill., 71 k. (from RZh-Kibernetika, No 9, Sep 72, Abstract No
9V542)

Translation: Chapter 1. Some Problems of Production Control. Chapter 2.
Interpolation Formulas, Least Square Method and the Law of Large Numbers.
Chapter 3. Mean Values and Variation Indexes. Chapter 4. Series. Chapter 5.
Dispersion Analysis and Sample Method. Chapter 6. Correlation Techniques.
Chapter 7. Characteristic of the Methods and Models of Optimal Programming.
Chapter 8. Transport Problem of Linear Programming. Chapter 9. Problem of
Optimal Placement of the Construction Base. Chapter 10. Distribution Problem
of Linear Programming. Chapter 11. General Problem of Linear Programming.
1/1

USSR

UDC: 547.915.5

5
MITSNER, B.I., SYRTSOVA, ZH.S., KOPYLOV, V.M., ZVONKOVA, YE.N., and ANDRIANOV, K.A.
Moscow Institute of Fine Chemical Technology imeni M.V. Lomonosov, Moscow,
Ministry of Higher and Secondary Specialized Education RSFSR

"Studies in the Field of Complex Lipids. New Synthesis of Erythro-2-N-stearoyl-sphinganyl-1-O-aminoethyl Phosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 942-943

Abstract: A new general method is suggested for the synthesis of erythro-2-N-stearoyl-sphinganyl-1-O-aminoethyl phosphate, based on the use of potassium organosilylamide. The method may also be used for sphingenine derivatives.

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Titanium

USSR

UDC 539.219.3:669.295'788

SYSHCHIKOV, V. I.

"Hydrogen Diffusion Coefficient in Alpha-Titanium"

Moscow, Metallovedeniye, No 5, May 70, pp 66-68

Abstract: The coefficient of hydrogen diffusion was determined in two titanium alloys; one containing 2.5% Al, the other with 2.0% Al and 2.5% Zr. The alloys were forged into 25-mm-diameter rods and machined into cylindrical samples. Some of the rods made from the first alloy were additionally heated to 1100°C for one hour, which increased grain growth. The coefficient of hydrogen diffusion was determined in the fine-grain alloy after forging and annealing, and in the coarse-grain alloy with no subsequent treatment. The isothermal temperatures used were 500, 700, and 850°C. The coefficient of hydrogen diffusion in the second alloy was determined after forging and annealing at temperatures ranging from 340 to 800°C. Hydrogenation and degassing of the cylinders was done in a vacuum furnace at 750-800°C, using pure hydrogen gas produced by thermal decomposition of titanium hydride powder.

It was found that the coefficient of hydrogen diffusion in the low-alloy titanium was less than in iodide titanium, which supports the theory that alloying should lower the rate of hydrogen diffusion in titanium. However, this lower rate was insignificant. Hydrogen possesses a very high mobility in titanium in
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USSR

SYSECHIKOV, V, I., Metallovedeniye, No 5, May 70, pp 66-68

comparison with the diffusion of other interstitial elements. For example, the coefficient of hydrogen diffusion at 800°C is 10^5 times greater, and at 350°C, 10^8 times greater than the rate of diffusion of oxygen in titanium. It was evident from the experimental data that at between 500 and 850°C the volume diffusion of hydrogen proceeds independently of grain size and microstructure. This result was explained from the geometrical ratios of the hydrogen atom dimensions, dissolved in the metal, to the metallic atoms and vacancies in the crystal lattice. Diffusion of atomic hydrogen with its small diameter ($0.92 \text{ \AA}$), should proceed frontally, independently of the grain size and shape and extent of the grain boundaries.

2/2

USSR

UDC: 534.222.2

BEREZKINA, M. K. and SYSHCHIKOVA, M. P.

"Relaxation Process in a Shock Wave in a Partially Ionized Gas"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low-Temperature Plasmas) Minsk, "Nauka i tekhn." 1970, pp 472-477 (from Rzh-Mekhanika, No. 2, Feb 71, Abstract No. 2B256)

Translation: The structure of the main shock wave formed around a blunt body in an ultrasonic flow of ionized xenon and krypton particles is investigated in a shock tube. An optical system permitting simultaneous interferometric measurements of the density of a gas and the concentration of electrons directly in front of the main shock wave, and recordings of shadow pictures of the flow around the body, is described. Information is obtained about the size of the relaxation zone behind the main shock wave for different degrees of gas ionization in the incident flow. Author's abstract

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1/2 064 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EXPERIMENTAL STUDY OF THE CHARACTERISTICS OF A MACH REFLECTION IN A
SHOCK TUBE -U-
AUTHOR-(03)-SEMOV, A.N., SYSHCHIKOVA, M.P., BEREZKINA, N.K.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL TEKHNICHESKOI FIZIKI, VOL. 40, MAY 1970, P. 1033-1043
DATE PUBLISHED----MAY70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SHOCK TUBE, MACH NUMBER, SHADOWGRAPH PHOTOGRAPHY, ARGON,
NITROGEN, CARBON DIOXIDE, FREON, SHOCK WAVE REFLECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605007/D09 STEP NO--UR/0057/70/040/000/1033/1043
CIRC ACCESSION NO--AP0139888
UNCLASSIFIED

2/2 064

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139888

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF SHADOW PHOTOGRAPH TO AN INVESTIGATION OF MACH REFLECTIONS IN ARGON, NITROGEN, CARBON DIOXIDE, AND FREON-12 AT MACH NUMBERS FROM 1.33 TO 6.34 IN A SHOCK TUBE.

A THEORY IS PROPOSED TO EXPLAIN THE PARADOX OF WEAK SHOCK WAVE REFLECTION. ACCORDING TO THIS THEORY, THE HUYGENS PRINCIPLE ACCOUNTS FOR THE MECHANISM OF TRANSFER OF AN ELEMENTARY SOURCE OF SOUND BY A SLIPSTREAM BEHIND AN INCIDENT SHOCK WAVE. THE SPECIFIC REFLECTION CHARACTERISTICS OF INTENSIVE SHOCK WAVES ARE LINKED TO THE DEVELOPMENT OF A HELICAL STREAM IN SECTIONS OF CONTACT DISCONTINUITIES ADJACENT TO THE SHOCK TUBE WALL.

FACILITY: AKADEMIIA NAUK SSSR,
FIZIKO-TEKHNICHESKII INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

USSR

AKHIEZER, I. A.; SYSHCHENKO, V. G. (Khar'kov State University)

"Surface Fluctuations and Scattering of Slow Neutrons in Antiferromagnetics"

Leningrad, Fizika Tverdogo Tela; February, 1971; pp 573-8

ABSTRACT: The surface fluctuations and scattering of slow neutrons in antiferromagnetics with perturbation (or absorption) of surface spin waves were studied. Expressions were obtained for correlation functions containing terms damping out in the depth of the crystal and, therefore, describing surface fluctuations. These terms have sharp maxima corresponding to the possibility of propagation in the antiferromagnetic of surface spin waves of two types -- optical and acoustical. Because of this, additional sharp maxima corresponding to the scattering of neutrons with a perturbation of surface oscillations occur in the scattering cross section of the slow neutrons.

The article includes 20 equations. There are 5 bibliographic references.
1/1

- 80 -

USSR

UDC 546.26:542.915:536.495

KONDRATOVA, L. S., PERVINA, N. V., and SYSKOV, K. I.

"Investigation of Pyrolytic Carbon at 2200-2600°C"

Moscow, Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 40-43

Abstract: The effect of heat treatment on the structure and properties of carbon-bonded materials was studied by using samples of filamented carbonized fibers bonded with pyrolytic carbon, crushed pyrolyzed petroleum coke, and graphitized rubble. The test materials were made into samples with a density of 1.6 g/cm³ for the fibrous material and 1.85-1.90 g/cm³ for the coke- and graphito-base materials. Microhardness tests of the samples after heat treating-heating at the rate of 800°/hr with a one-hour soak at maximum temperature (2800° C) -- revealed that the highest hardness was produced in the fibers with pyrolytic carbon with hardness decreasing with increased temperature. The coke with pyrolytic carbon had a microhardness slightly under that of the pyrolytic fibers but this hardness dropped rapidly and above 2000° C had the lowest hardness of the five materials tested. It was hypothesized that the microhardness drop of pyrolytic carbon is caused to a considerable degree by the breakdown of its conical structure. It is recommended that in the production of thermally stable pyrolytic carbon-bonded materials an attempt should be made to create a

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USSR

KONDRATOVA, L. S., et al., Neorganicheskiye Materialy, Vol 10, No 1, Jan 74,
pp 40-43

skeleton structure in which the bonding chains have the smallest possible
dimensions. Four figures, three bibliographic references.

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- 63 -

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ROTARY RING FURNACE PREPARATION OF LUMP SMOKELESS HOUSEHOLD FUEL
FROM CENTRAL ASIAN COALS -U- 2
AUTHOR--GRACHEV, G.I., ZAGORETS, A.M., MAKAROV, G.N., PEREVEZENTSEV, A.V.,
SYSKOV, K.I.
COUNTRY--OF INFO--USSR
SOURCE--KHIM. TVERD. TOPL. 1970, (1), 78-85
DATE PUBLISHED-----70
SUBJECT AREAS--PROPULSION AND FUELS
TOPIC TAGS--COAL, PYROLYSIS, SOLID FUEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/2033 STEP NO--UR/0467/70/000/001/0078/0085
CIRC ACCESSION NO--AP0109965
ZZZZZZZZZZZZ UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109965

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE FUEL WAS PREPD. BY GRANULATION AND THERMAL TREATMENT OF MIXTS. OF 55-65 PARTS OF CENTRAL ASIAN NON CAKING COALS WITH 25-35PARTS OF SIFTINGS OF KARAGANDA COALS. THE MIXTS. ARE INTRODUCED INTO A ROTARY RING FURNACE AT 750DEGREES AND SLOWLY HEATED TO 1050DEGREES WHILE THE HEARTH REMAINED AT 540DEGREES. WITH THE TITLE FUEL THE EFFICIENCY OF HOUSEHOLD OVENS REACHED 80PERCENT WHILE WITH SIMILAR BRIQUETS NOT THERMALLY TREATED THE COEFF. WAS SMALLER THAN 65PERCENT.

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UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ROTARY RING FURNACE PREPARATION OF LUMP SMOKELESS HOUSEHOLD FUEL
FROM CENTRAL ASIAN COALS -U- 4
AUTHOR--GRACHEV, G.J., ZAGORETS, A.M., MAKAROV, G.N., PEREVEZENTSEV, A.V.,
SYSKOV, K.I.
COUNTRY OF INFO--USSR G
SOURCE--KHIM. TVERD. TOPL. 1970, (1), 78-85 S
DATE PUBLISHED-----70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--COAL, PYROLYSIS, SOLID FUEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/2033

STEP NO--UR/0467/70/000/001/0078/0085

CIRC ACCESSION NO--AP0109965

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UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109965

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE FUEL WAS PREPD. BY GRANULATION AND THERMAL TREATMENT OF MIXTS. OF 55-65 PARTS OF CENTRAL ASIAN NON CAKING COALS WITH 25-35PARTS OF SIFTINGS OF KARAGANDA COALS. THE MIXTS. ARE INTRODUCED INTO A ROTARY RING FURNACE AT 750DEGREES AND SLOWLY HEATED TO 1050DEGREES WHILE THE HEARTH REMAINED AT 540DEGREES. WITH THE TITLE FUEL THE EFFICIENCY OF HOUSEHOLD OVENS REACHED 80PERCENT WHILE WITH SIMILAR BRIQUETS NOT THERMALLY TREATED THE COEFF. WAS SMALLER THAN 65PERCENT.

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UNCLASSIFIED

USSR

UDC 549.212 + 543:620.1

ZHELIKHOVSKAYA, E. I., and SYSKOV, K. I., Moscow Institute of Chemical Technology
imeni D. I. Mendeleev, Moscow, Ministry of Higher and Secondary Specialized
Education RSFSR

"Optical Study of the Structure of Pyrolytic Carbon"

Moscow, Khimiya Tverdogo Topliva, No 5, Sep-Oct 70, pp 93-97

Abstract: The authors studied the effect of certain process factors on the formation of the globular-conical structure of pyrolytic carbon and attempted to study the structure of the globular formations by the method of consecutive surface oxidation. The size (diameter) of the globular formations was studied in relation to the process time and temperature, the concentration of the reaction zone. The results indicate that the globule size increases with an increase in all these factors. This is proof and the formation of pyrolytic carbon.

The globular and the canonical structure were found to be inter-related, confirming that a stage in the formation of pyrolytic carbon is the appearance of high-molecular hydrocarbons. These intermediate compounds take the shape of drops.

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USSR

ZHELIKHOVSKAYA, E. I., and SYSKOV, K. I., Khimiya Tverdogo Topliva, No 5,
Sep-Oct 70, pp 93-97

The method of consecutive oxidation of pyrolytic carbon films, developed by the State Scientific Research Institute of the Electrode Industry, Chelyabinsk, was used to study the fine microstructure of the globules, making it possible to study the behavior of pyrolytic carbon in individual oxidation stages and to find a number of peculiarities in globule structure. On the basis of the results, a mechanism is suggested for the initiation of pyrolytic carbon and the growth of its globular-conical structure.

2/2

- 31 -

USSR

UDC: 620.179.16

NIKIFORENKO, Zh. G., SYSKOV, V. A., KREPS, N. S., IGNATINSKIY, I. L.,
VNIINK, Kishinev

"Ultrasonic Inspection of Bilayer Plates"

Sverdlovsk, Defektoskopiya, No 3, May/Jun 71, pp 87-93

Abstract: In order to evaluate the possibility of inspecting bilayer plates by the ultrasonic reflected pulse resonance method (L. G. Merkulov, V. M. Verevkin, Defektoskopiya, 1965, No 5, p 13) when the contacting liquid can wet only one surface of the plate to feed ultrasonic oscillations into the material being inspected, the authors calculate the shape of a pulse reflected from a plate separating liquid from air, dis- regarding attenuation. A block diagram of the ultrasonic flaw detector is presented. The proposed device can be used to check for diffusion welds between the layers of double-layer plates. The results of experi- ments show that the Merkulov-Verevkin method is a sound basis for highly sensitive high-productivity flaw detection.

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USSR

SYSOYENKO, V. G., Chair of Phytopathology, Agricultural Academy imeni
K. A. Timiryazev

UDC 632.163

"General Plasmatic Effect of the Toxins of the Agent of Fusarium Wilt of
Flax"

Moscow, Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, No 4,
1972, pp 143-149

Abstract: The resistance of flax and of 14 other species of plants to the toxins of fusarium fungi causing wilt of flax was studied. The culture liquid of fusarium strain Yarlovskiy (the most pathogenic strain of those tested in 1969-70), that had been isolated from infected Bulgarian flax plants, was used in laboratory experiments conducted on flax, cabbage, winter wheat, lupine, corn, and clover. The filtered culture liquid produced wilting of both dicotyledonous and monocotyledonous plants. Various methods of introducing the infection into the soil were tried in field experiments. The toxins of fusarium wilt produced pathogenic symptoms in all 15 species of plants tested in laboratory and field experiments. Accumulation of fusarium infection in the soil inhibited the growth not only of flax, but also of other crops planted in crop rotation after the flax. Depression of growth and reduction of yields of clover, lupine, rye grass, fescue, potatoes, wheat, barley, and oats took
1/2

- 70 -

USSR

SYSOYENKO, V. G., *Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii*,
No 4, 1972, pp 143-149

place in field experiments in which these crops were grown on soil infected as a result of prolonged cultivation of flax. Aqueous extracts from infected soil produced flax wilt even in the absence of live fusarium fungi, i.e., solely as a result of the action of toxins with general plasmatic activity that had accumulated in the soil.

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1/2 018
TITLE--IONIC COMPONENT OF THE CATHODIC SPUTTERING OF A COPPER SINGLE
CRYSTAL -U-
AUTHOR--(05)-BUKHANOV, V.M., YURASOVA, V.YE., SYSOYEV, A.A., SAMSONOV,
G.V., NIKOLAYEV, B.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(2), 394-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--COPPER CRYSTAL, NEON, ION, CATHODE SPUTTERING, METAL SINGLE
CRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0144
CIRC ACCESSION NO--AP0054940
STEP NO--UR/0181/70/012/002/0394/0397
UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--AP0054940

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

INVESTIGATION IS DESCRIBED OF THE

ANGULAR AND ENERGY DISTRIBUTIONS OF SECONDARY POS. IONS, KNOCKED OUT

FROM THE (100) FACE OF CU BY NE IONS WITH ENERGIES OF 5 AND 20 KEV.

UNCLASSIFIED

89

Oscillators and Modulators

USSR

SYSCYEV, A. S., TRET'YAKOV, O. A.

UDC: 621.372.413

"Cavity Resonators With a Diffraction Grating Acting as One Mirror"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1951-1953

Abstract: Natural oscillations in open resonators with a diffraction grating replacing one of the mirrors are considered with regard to applications in diffraction electronics. Two types of gratings are considered: a reflecting grating of the "corrugated" type, and a flat strip grating. The other mirror is a cylindrical reflector. The analysis is based on substituting an impedance plane for the diffraction grating with the assumption that the diffraction properties of the grating for natural oscillations remain the same as when a plane wave is incident on the grating. The most promising field of application for such structures is as resonant systems in diffraction emission oscillators of the orotron type.

USSR

SYSOYEV, I. I.

"Use of Natural Redundancy of Input Words of an Automaton for Correction of Errors in Memory Elements"

Sistemy Avtomatich. Upr. [Automatic Control Systems -- Collection of Works], Kiev, 1971, pp 24-33, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V353).

NO ABSTRACT.

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5785 69205

6-73

VII-2. MECHANISM OF THE OCCURRENCE OF PORES IN CRYSTALS GROWN FROM A GAS-SATURATED MELT

Article by N. I. Birman, Ye. R. Dobrovinskaya, V. V. Pavlov, A. A. Syrovatskiy, and L. V. Altschul'skiy. All-Union Scientific Research Institute of Single Crystals, Kharkov, Novosibirsk, III Simposium on Problems of Physics of Solids, Uspokoinykh Krasnolov I Plavok, Russian, 12-17 June 1972, p. 102.

A study was made of the physical processes determining the pore formation in single crystals for their growth from a gas-saturated melt. The dissociation and saturation of the melt with the gas solution components, their escape deep in the melt as a result of diffusion and convection are investigated. A study was made of the problem of the occurrence of nucleating centers of the gas phase at the crystallization front and their effect on the pore formation in the liquid phase.

The morphology of pores in single crystals of cadmium sulfide, zinc sulfide and juncosapelite was investigated. In the crystals pores of spherical, columnar and drop shape were observed. Studies were made of the problems of escape of the pores during the process of high-temperature annealing. Certain problems of the growth kinetics of bubbles in the melt and the columnar pores in the crystal are discussed.

The general laws of the occurrence of pores in single crystals of semiconducting ionic compounds grown from a dissociating melt were found.

34504EV L.A.

SPK5 59008

6-73

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VIII-06. STUDY OF LATTICE DEFECTS IN SINGLE ZINC SULFIDE CRYSTALS AND THEIR EFFECT ON PHYSICAL PROPERTIES

Article by V. V. Kikot', Ye. Ye. Jarkin, L. A. Svyatov, N. A. Kozlov, Novosibirsk, 111 51, 1972, 12-17 June 1972, p. 1111

In the group of II-VI compounds, the zinc sulfide crystals from which have an effect on the physical properties of the packing defects are described in the literature for determining the packing defects in single crystals on a diffractometer (with respect to the scattering of the x-rays by phalipier and wurtzite). It also fails to permit distinguishing of the packing defects and the scattering of the x-rays by phalipier and wurtzite. Since the known x-ray diffraction method of wurtzite and phalipier is not applicable to single crystals, we have developed a method of determining the packing defect concentration in single crystals by means of a diffractometer (corresponding to diffusion of the inverse lattice node of the crystals).

Results are presented from determining the packing defect concentration in single crystals from under different conditions and with different additives and also depending on the temperature and time of annealing of the crystals. A comparison is made with other physical characteristics of the crystals.

USSR

UDC 621.382.002

GAYSINSKIY, V.B., GAL'CHINETSIIY, L.P., GRIGOR'YEV, A.N., KOSHKIN, V.M., KULIK, V.N., NIKOLAYCHUK, L.I., PIVOVAR, L.I., RAYSKIN, E.K., SYSOYEV, L.A., FAYNER, M.SH.

"Ion Implantation Of Single Crystals Of Cadmium Sulfide"

V sb. Monokristally i tekhnika (Single Crystals And Technology--Collection Of Works), Issue 6, Khar'kov, 1972, pp 109-112 (from RZh:Elektronika i yeye primeneniye, No 11, Nov 1972, Abstract No 11B459)

Translation: The effect was studied of the dose and energy of irradiation by lithium ions in the temperature range from minus 70 to plus 180° C on the conductivity of cadmium sulfide. A divergence is found between the theoretically calculated value of the depth of penetration of lithium ions and the experimental results. These divergences are accounted for by the marked differences of the structures of the surface layer and the volume of the crystal. With the aid of ion implantation piezosemiconductor transducers were produced based on a high-resistance layer in CdS. Summary.

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USSR

UDC 546.48'22 : 548.55

OSUKHOVSKIY, YA. A., and SYSOYEV, L. A., All-Union Scientific Research Institute of Single Crystals, Scintillation Materials and Ultrapure Chemicals, Khar'kov

"Treatment of CdS Single Crystals in Salt Melts"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 10, Oct 70, pp 1784-1786

Abstract: The authors studied changes in the properties of undoped CdS single crystals grown from melt after annealing at 900° C in salt melts (LiCl, NaCl, KCl). It was found that there is no change in the electrical properties and microhardness of the crystals as a result of annealing in NaCl and KCl melts. Annealing in the LiCl melt increases the resistivity from 1 to 10^{10} ohms/cm. The introduction of Ag, Cu, In, Na and Cd during annealing in the LiCl melt leaves the dark resistance of the crystals practically unchanged. This indicates that the high lithium concentration of the melt ($3 \cdot 10^{-4}$ wt. percent)

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USSR

OBUKHOVSKIY, YA. A., and SYSOYEV, L. A., Izvestiya Akademii Nauk SSSR
-- Neorganicheskiye Materialy, Vol 6, No 10, Oct 70, pp 1784-1786

compensates for the electron conductivity of the crystal, and the aforementioned additions of salt in conjunction with LiCl have no significant effect on the properties. A decrease in the Li concentration of the melt to 3-4 percent by diluting it with the eutectic mixture NaCl + KCl lowers the dark resistance by ~ 2 orders with a light resistance of $1 \cdot 10^4$ ohms/cm. A further decrease in the LiCl concentration to 1 percent increases the dark conduction with invariant light conduction. There is no change in the electrophysical properties of CdS crystals as a result of annealing in a melt with low LiCl concentrations. The photosensitivity of the crystals is increased by adding 10^{-3} percent CuInS₂ in addition to 3 percent LiCl. Dark resistance is then lowered by $\sim 1-2$, light resistance by 2-3 orders. The resultant crystals are suitable for ultrasound amplification.

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USSR

UDC 546.48'22:548.55:539.4

ATROSHCHENKO, L. V., SYSOYEV, L. A., OBUKHOVSKIY, YA. A., and KOSHKIN, V. M., All-Union Scientific Research Institute of Single Crystals

"Effect of the Orientation of the Second Phase on the Anisotropy of Brittle Failure in Single Crystals of CdS Alloyed With Lithium"

Moscow, Neorganicheskiye Materialy, Vol 6, No 11, Nov 70, pp 1917-1921

Abstract: A study was made of the anisotropy of brittle failure in single crystals of cadmium sulfide alloyed with lithium as a function of concentration. A metallographic investigation of sections, the cleavage structure, and the pattern of brittle failure of the crystals around the impressions made by microindenter loading showed that at Li concentrations of the order of $0.5 \cdot 10^{-2}$ wt% the cleavage plane of cadmium sulfide is modified. If nonimpurity CdS single crystals undergo cleavage only along the $\{100\}$ or $\{110\}$ planes, then brittle failure can occur in cadmium sulfide strongly alloyed with lithium only along the basal planes $\{001\}$. This effect is associated with the segregation of the second phase as plates arranged in layers, parallel to the $\{001\}$ planes of the matrix crystal. It was experimentally shown that the plates are the composition CdS .

USSR

UDC 621.382.9

OSUKHOVSKIY, YA.A., SYSOYEV, L.A., FAYNER, M.SH.

"Use Of Melted Monocrystals Of Cadmium Sulfide For Ultrasonic Transducers"

V sb. Monokristally i tekhnika (Monocrystals And Technology--Collection Of Works), Issue 1, Khar'kov, 1970, pp 24-26 (from RZh--Elektronika i yeye pri-
meneniye, No 4, April 1971, Abstract No 4B385)

Translation: A method is described for producing a piezotransducer, using the diffusion of lithium. The distinctive characteristic of the method described is its simplicity and the high stability of the parameters of the transducers.

Summary.

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USSR

UDC 621.382.9

OBUKHOVSKIY, Ya. A., FAYNER, M. Sh., SYSOYEV, L. A., and GRIGORENKO, G. D.

"Effect of the Parameters of the Source Material of Cadmium Sulphide on the Efficiency of Operation of Piezotransducers Using a Diffused Layer"

V sb. Monokristally i tekhnika (Monocrystals and Technics -- Collection of Works), Issue 3, Khar'kov, 1970, pp 207-210 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B454)

Translation: The dependence is found of the efficiency of operation of piezotransducers using a diffused layer in CdS, operating in the 30-300 MHz frequency range, on the concentration of impurities in source material of various brands and the concentration of the donor impurities Al, In, Ga, introducable in the process of growth. It is shown that annealing of the source material of CdS and the introduction of Al in a concentration $\sim 5 \times 10^{-2}$ percent by weight during growth increases the efficiency of operation of the piezoconverter by 20-30 db. Summary.

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1/2 018
UNCLASSIFIED
TITLE--SINGLE CRYSTALS OF IN SUB2 TE SUB3 WITH A PROGRESSIVELY VARYING
MAGNITUDE OF DEVIATION FROM STOICHIOMETRY -U-
AUTHOR--(04)--GALCHINETSKIY, L.P., ATROSHCHENKO, L.V., KOSHKIN, V.M.,
SYSOYEV, L.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. SSSR. MOSCOW, NEORGANICHESKIYE MATERIALY, VOL 6, NO 5, MAY
70, PP 860-863
DATE PUBLISHED--MAY70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--SINGLE CRYSTAL, INDIUM COMPOUND, TELLURIDE, ELECTRIC PROPERTY,
PHYSICAL PROPERTY, STOICHIOMETRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1534
STEP NO--UR/0363/70/006/005/0860/0863
CIRC ACCESSION NO--AP0133461
UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--AP0133461

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED ALLOYS IN THE AREA OF IN SUB2 TE SUB3 HOMOGENEITY USING SINGLE CRYSTAL SAMPLES AND COMPARED THE RESULTS OBTAINED WITH DATA FROM POLYCRYSTALLINE MATERIALS. SINGLE CRYSTAL SAMPLES WERE OBTAINED BY ZONE MELTING. THE RESULTS CORROBORATED THE COMPOSITION DIAGRAM PLOTTED FROM EARLIER DATA FOR THE IN-TE SYSTEM, CLOSE TO THE COMPOUND IN SUB2 TE SUB3. IT WAS FURTHER DETERMINED THAT PHYSICAL PROPERTIES OF SINGLE CRYSTALS IN THE ENTIRE RANGE OF THE EXISTENCE OF IN SUB2 TE SUB3 ARE IDENTICAL WITH THE PROPERTIES OF POLYCRYSTALLINE SAMPLES. DEVIATIONS FROM STIOCHOMETRY SHOW PRACTICALLY NO EFFECT ON THE ELECTRIC PROPERTIES OF THE DEFECTIVE PHASE OF IN SUB2 TE SUB3. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF SINGLE CRYSTALS, KHAR'KOV.

UNCLASSIFIED

USSR

UDC 548.55

S
GAL'CHINETSKIY, L. P., ATROSHCHENKO, L. V., KOSENIN, V. M.,
SYSOYEV, I. A., All Union Scientific Research Institute of
Single crystals, Khar'kov

"Single Crystals of In_2Te_3 With a Progressively Varying Magnitude
of Deviation From Stoichiometry"

Moscow, Neorganicheskiye Materialy, Vol 6, No 5, May 70, pp 860-
863

Abstract: The authors studied alloys in the area of In_2Te_3 homogeneity using single crystal samples and compared the results obtained with data from polycrystalline materials. Single crystal samples were obtained by zone melting. The results corroborated the composition diagram plotted from earlier data for the In-Te system, close to the compound In_2Te_3 . It was further determined that physical properties of single crystals in the entire range of the existence of In_2Te_3 are identical with the properties of polycrystalline samples. Deviations from stoichiometry show practically no effect on the electric properties of the defective phase of In_2Te_3 .

USSR

SYSOYEV, L. A., AND KOVALEVA, A. D.

UDC 661.143:546.48'221

"The Nature and Formation Mechanism of Inherent Defects During Annealing of the CdS Crystals"

Khar'kov, Sb. Monokristally i Tekhnika (Collection of Works: Single Crystals and Technology), Vyp 6, 1972, pp 103-108 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23L135)

Translation: A comparison of data regarding the pycnometer density (PD), x-ray density (RD), and microhardness (MH) of CdS crystals grown from melt and subjected to annealing in the Cd and S vapors has shown that the annealing in the Cd vapor decreases and in the S vapor increases the PD of crystals. The RD remained unchanged during the annealing. The basal plane MH of crystals increased slightly when annealed in the Cd vapor and decreased when annealed in the S vapor. This indicated that the effective charge of the cationic sublattice underwent some changes. The obtained results are attributed to the disorder mechanism of the cationic sublattice. It was demonstrated that the principal type of defects in the CdS crystals is located in the internodal Cd.

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- 27 -

USSR

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UDC: 681.327.12

KOROVIN, V. G., KOTIKOV, Yu. P., REPIN, V. I., SAMORUKOV, V. A., SYSOYEV, N. V., TEL'NYKH, O. A.

"A Computer Tape-Punching Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335704, Division G, filed 3 Jul 69, published 11 Apr 72, p 210

Translation: This Author's Certificate introduces a device for punching computer tape. The device contains a perforating mechanism connected to the driven shaft of a single-turn drive clutch. The code electromagnets of the perforating mechanism are electrically connected to the program head of a readout module. The device also incorporates a tape transport mechanism with two geared drive drums and the wheel of a ratchet mechanism fastened on a common shaft. The dog of the ratchet mechanism is connected to the driven shaft of the single-turn drive clutch. As a distinguishing feature of the patent, the working precision of the device is improved by fastening the eccentric of the punching mechanism drive and the crank of a quadric-crank mechanism on the driven shaft of the single-turn drive clutch

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OVIN, V. G. et al., USSR Author's Certificate No 335704

nd by fastening the dog of the ratchet mechanism on the rocker arm of the quadric-crank mechanism, which is mounted on the common shaft of the tape-transport mechanism.

1/2 031
UNCLASSIFIED
TITLE--DEPENDENCE OF THE SPECIFIC FORCE OF CUTTING ON THE MECHANICAL
CHARACTERISTICS OF POLYMER MATERIALS -U- PROCESSING DATE--13NOV70
AUTHOR--(03)-SYSOYEV, P.V., CHEIVERIKOV, G.M., KUKHARENKO, L.B.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., MASHINOSTR. 1970, (2), 143-51
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--THERMOPLASTIC MATERIAL, FLUORINATED ORGANIC COMPOUND,
POLYETHYLENE, VINYL RESIN, POLYFORMALDEHYDE, POLYMETHYLMETHACRYLATE,
CAPROLACTAM, HARDNESS, ELONGATING, PLASTIC MECHANICAL PROPERTY, TEST
METHOD/(U)FUDORPLAST FLUORINE RESIN, (U)VINIPLAST VINYL RESIN,
(U)KAPROLON PLASTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1117 STEP NO--UR/0145/70/000/002/0148/0151
CIRC ACCESSION NO--AT0134803
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--13NOV76

CIRC ACCESSION NO--AT0134803

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS OF THE CUTTING STRENGTH (P_{SUB2}) OF THERMOPLASTIC POLYMERS, E.G., FIDROPLAST, POLYETHYLENE, VINIPLAST, POLYFORMALDEHYDE, POLY(METHACRYLATE), POLYCAPROLACTAM, P, 68, AND KAPROLON INDICATED THAT P_{SUB2} INCREASED WITH POLYMER HARDNESS AND RELATIVE ELONGATION. AN EXPONENTIAL EQUATION (EXPONENT SMALLER THAN 1), WHICH EXPRESSED P_{SUB2} AND POLYMER SHAVING CROSS SECTION AS A FUNCTION OF THE YIELD POINT, WAS DERIVED. FACILITY: BELORUSS. INST. INZH. ZHELEZNODOROZH. TRANSP., USSR.

UNCLASSIFIED

Acc. Nr: **AP0034763**

Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol 15,
Nr 1, pp 39-43

THE USE OF RADIOIODINE-LABELLED THROMBRINE FOR DETERMINATION
OF THE GLOMERULAR FILTRATION

Sysoyev, V. F.; Kozlova, V. N.

Summary

The paper describes the technique of determining the glomerular filtration based on a single injection and evaluating the mean concentration of radioiodine-labelled thrombrine during the period of clearance on the basis of a single blood test and continuous recording of changes in the concentration of radioiodine-labelled thrombrine on the precordial curve.

D. H.

REEL/FRAME

19711473

02

UDC: 624.07:534

USSR

SYSOYEV, V. I.

"Forced Oscillations of Systems With One Degree of Freedom Equipped With Impact Vibration Dampers"

Tr. TsNII stroit. konstruktsiy (Works of the Central Scientific Research Institute of Construction Elements), 1971, vyp. 17, pp 158-208 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7V219)

Translation: An investigation is made of forced oscillations of systems with a single degree of freedom equipped with impact spring and pendulum vibration dampers. A case is considered where the spring damper is connected by an elastic coupling only to a fixed base, as well as a variant where the spring damper is connected by elastic couplings to the system and to the fixed base. In both instances the solution is found both with and without regard to attenuation.

A solution is found for the problem of forced oscillations when a pendulum damper is present in the system without regard to forces of internal friction in the system, and when the system contains such a damper with and without regard to the force of inertia of the damper, and also

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with regard to attenuation in the system but disregarding the force of inertia of the damper. The results of solution of the differential equations of the problems are presented in the form of graphs which enable selecting the parameters of the system and the damper in specific instances of vibration damping in the system in accordance with given diagrams. Consideration is given to three cases of possible application of impact vibration dampers in construction. B. M. Vysochin.

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UDC: 624.07:534

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USSR

UDC 615.37.012.6.078

SI
KIYANSKAYA, L. A., SYSOYEV, Yu. P., and AKATOVA, N. S., Leningrad Branch, All Union Scientific Research Institute of Medical Instrument Building, and Control Institute of Medical and Biological Preparations imeni L. A. Tarasevich

"The Fluorometric Method for Determining the Concentration of Microbial Cells in Suspensions"

Moscow, Laboratornoye Delo, No 4, 1970, pp 246-248

Abstract: The principle of fluorescent staining was used to determine the concentration of cells in suspensions. It was noted that after exposure to ultraviolet light, a suspension of microbial cells labeled with a luminescent dye luminesces with an intensity directly proportional to the concentration of the microbes in the range of $5 \cdot 10^7$ -- $20 \cdot 10^7$ cells per ml. The shape and size of the microorganisms do not affect this relationship.

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UNCLASSIFIED

TITLE--DETERMINATION OF THE STERIC ORIENTATION OF THE HYDROXYL GROUPS OF
STEREISOMERIC 4,ETHYNYL,4,PIPERIDINOLS AND THEIR ANALOGS ACCORDING TO
AUTHOR--(05)-MAMONOV, V.I., DVORYANTSEVA, G.G., SOKOLOVA, T.D., SYSOYEVA,
E.B., UNKOVSKIY, B.V.
COUNTRY OF INFO--USSR

SOURCE--ZZH. ORG. KHIM. 1970, 6(5), 1087-91

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, IR SPECTRUM, PIPERDINE, HYDROXYL RADICAL,
QUINOLINE, ALKYNE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1266

CIRC ACCESSION NO--AP0134940

STEP NO--UR/0366/70/006/005/1087/1091

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134940

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE WAVE NO., THE INTENSITY, AND THE WIDTH AT MID POINT OF IR BANDS ASSIGNED TO AXIAL (ALPHA) OH GROUPS OF 2R,4R PRIME1, DISUBSTITUTED,4, HYDROXY,1,5, DIMETHYLP[ERIDINES (I) WERE ALL HIGHER THAN THOSE ASSIGNED TO THE EQUATORIAL (EPSILON) OH GROUPS. E.G. I (R EQUALS H, R PRIME1 EQUALS C TRIPLE BOND CH) HAD AN ALPHA OH BAND AT 3619 CM PRIME NEGATIVE1 AND AN EPSILON OH BAND AT 3611 CM PRIME NEGATIVE1. SIMILAR DIFFERENCES WERE FOUND WITH OTHER I (R AND R PRIME1 GIVEN): ME, C TRIPLE BOND CH; H, ET; AND ME, ET. ANALOGOUS ALPHA EPSILON OH BAND DIFFERENCES EXIST IN 4,(R,SUBSTITUTED), 4, HYDROXY,2, METHYLDECAHYDROQUINOLINES (R IS ET OR C TRIPLE BOND CH). FACILITY: MOSK. INST. TONKOT KHIM. TEKHNOL. IN. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

028
UNCLASSIFIED
TITLE--INVESTIGATION OF THE GETE,CU SUB2 TE SYSTEM -U-
PROCESSING DATE--04DEC70
AUTHOR--(04)-ABRIKOSOV, N.KH., BANKINA, V.F., LEV, YE.YA., SYSOYEVA, L.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. SSSR. MOSCOW, NEORGANICHESKIYE MATERIALY, VOL 6, NO 5, MAY
70, PP 864-867
DATE PUBLISHED---MAY70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--GERMANIUM ALLOY, TELLURIUM ALLOY, COPPER ALLOY, TELLURIDE,
SOLID SOLUTION, SEMICONDUCTOR MATERIAL, INTERMETALLIC COMPOUND,
METALLURGIC RESEARCH FACILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1540
CIRC ACCESSION NO--AP0133464
STEP NO--UR/0363/70/006/005/0864/0867
UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0133464

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLOYS OF THE GERMANIUM TELLURIUM COPPER TERNARY SYSTEM WERE STUDIED ALONG THE GE SUB0.97 TE, CU SUB2 TE PROFILE. THIS IS A QUASIBINARY PROFILE OF THE EUTECTIC TYPE WITH LIMITED REGIONS OF SOLID SOLUTIONS. THE AUTHORS ANALYZED THE MECHANISM OF THE FORMATION OF SOLID SOLUTIONS BASED ON GERMANIUM TELLURIDE AND SHOWED THAT WITH SOLUTION OF CU SUB2 TE, A PORTION OF COPPER ATOMS DISSOLVES IN THE VACANCIES, LOWERING THE CONCENTRATION OF THE POSITIVE CHARGE CARRIERS. ANOTHER PORTION REPLACES GERMANIUM, UTILIZING THEIR VALENCE ELECTRONS IN BONDING TO THE TELLURIUM ATOM INTRODUCED CONCURRENTLY. SUCH A MECHANISM OF FORMATION OF SOLID SOLUTIONS IS CHARACTERISTIC OF NONSTOICHIOMETRIC SEMICONDUCTIVE COMPOUNDS WITH VACANCIES. GERMANIUM TELLURIDE APPEARS TO BE ONE SUCH COMPOUND. FACILITY: INSTITUTE OF METALLURGY IMENI A. A. BAYKOV, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

1/3 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--RADIOCHEMICAL DETERMINATION OF THE SPECIFIC ACTIVITY OF ANTIMONY IN
VARIOUS SUBSTANCES --U-
AUTHOR--(03)--MAKSIMOV, I.N., SYSOYEVA, L.N., YAKOVLEVA, G.V.
COUNTRY OF INFO--USSR
SOURCE--RADIUKHIMIYA 1970, 12(1), 189-91
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ANTIMONY, CHEMICAL ANALYSIS, RADIOACTIVE ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0084 STEP NO--UR/0186/70/012/001/0189/0191
CIRC ACCESSION NO--AP0125917
UNCLASSIFIED

2/3 008

CIRC ACCESSION NO--AP0125917
ABSTRACT/EXTRACT--(U) GP-C-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. FOR THE DETN. OF THE SP. ACTIVITY OF PRIME124 SB AND PRIME125 SB IN ROCKS, CLAYS, ASHES, ETC., TREAT 1 G OF THE SAMPLE IN A HCT MIXT. OF 15-20 ML HNO SUB3 AND 10-15 ML HF. TO THE SOLN., ADD 5 ML OF 1:1 H SUB2 SO SUB4 AND EVAP. UNTIL THE APPEARANCE OF H SUB2 SO SUB4 VAPORS. COOL THE PRODUCT, ADD 10 ML H SUB2 O AND HEAT AGAIN UNTIL THE APPEARANCE OF H SUB2 SO SUB4 VAPORS. DIL. WITH AN EQUAL VOL. OF H SUB2 O, ADD 10-15 ML 1:1 HCL, HEAT TO DISSOLVE THE SALTS, AND FILTER THROUGH A DENSE FILTER. WASH THE RESIDUE WITH HOT 1:1 HCL, ADD TO THE FILTRATE, AND ADJUST THE VOL. TO 50 ML WITH 1:1 HCL. IT AT THAT STAGE THE SOLN. IS NOT COLORED (INDICATING THE ABSENCE OF FE) ADD 1-2 ML OF A 15PERCENT FECL SUB3 SOLN. (TO SERVE AS CARRIER); NO SUCH ADDN. IS NECESSARY IF THE SOLN. IS COLORED. TITRATE WITH A 15PERCENT SNCL SUB2 SOLN. UNTIL THE DISAPPEARANCE OF THE COLOR, THEN ADD 1-2 ML OF A 5PERCENT NANO SUB2 SOLN., WAIT FOR 10-15 MIN, DIL. WITH AN EQUAL VOL. OF H SUB2 O AND ADD 1 ML OF A SATD. SOLN. OF UREA. SHAKE THE SOLN. FOR 2-3 MIN, AND ADJUST THE VOL. TO 100 ML WITH H SUB2 O. ADD 1-2 ML OF A 0.2PERCENT SOLN. OF METHYL VIOLET, MIX THOROUGHLY AND ADD 10 ML OF PHME. SHAKE FOR 3-5 MIN AND SEP. THE PHME PHASE CONTG. THE SB (REPEAT THIS OPERATION 2-3 TIMES WITH FRESH BATCHES OF PHME AND COMBINE THE PHME EXTS.). ADJUST THE VOL. OF THE PHME EXT. TO 50 ML AND DET. THE TOTAL SB CONCN. BY MEASURING THE ABSORBANCE AT 620-30 NM, THEN DISTILL OFF THE PHME AND MEASURE THE ACTIVITIES OF PRIME124 SB AND PRIME125 SB WITH THE ACID OF A SCINTILLATION GAMMA SPECTROMETER, AT 1710 AND 427 KEV, RESP.

UNCLASSIFIED

3/3 008

CIRC ACCESSION NO--AP0125917

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--THE SENSITIVITY OF THE METHOD IS 10 PRIME NEGATIVE 10 C.I.

UNCLASSIFIED

UNCLASSIFIED
TITLE--INTERACTION OF HIGH ENERGY ALPHA PARTICLES WITH NUCLEI -U-
AUTHOR--(04)--DUDKIN, V.E., PVANOV, I.I., SYSOYEVA, G.V., VIKHROV, A.I.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(1), 36-42
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ALPHA INTERACTION, HIGH ENERGY PARTICLE, MONTE CARLO METHOD,
ALPHA BOMBARDMENT, ALUMINUM, SILVER, NITROGEN, NIOBIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1980/0172
CIRC ACCESSION NO--AP0048464
STEP NO--UR/0367/70/011/001/0036/0042
UNCLASSIFIED

026
CIRC ACCESSION NO--AP0048464
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. INTERACTION OF 105-MEV ALPHA PARTICLES WITH PRIME17 AL AND PRIME108 AG, AND 380-MEV ALPHA PARTICLES WITH PRIME14 N, PRIME27 AL, AND PRIME93 MB WAS CALCD. BY USING THE MONTE CARLO METHOD ON THE BASIS OF CASCADE EVAPN. MODEL. COMPARISON OF THE CALCD. RESULTS WITH THE EXPTL. DATA SHOWS THAT THE MODEL USED PERMITS A REASONABLE DESCRIPTION OF THE GENERAL CHARACTERISTICS OF THE INTERACTION.
FACILITY: INST. MED.-BIOL. PROB., MOSCOW, USSR.

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